

**FRYERIA.** Vent in the middle of the hinder part, in the groove between the mantle and the foot.

1. *Fryeria pustulosa*. Black, with three series of large, unequal, white tubercles on the middle of the back, and with large square white spots containing a tubercle, surrounded by smaller ones, on the edge of the mantle. *Phyllidia pustulosa*, Rüppell, Atlas, Moll. t. 11. f. 1, 1 a. *Inhab.* Cosseir. Brit. Mus.

*Phyllidia pustulosa*, Cuvier, Ann. Mus. v. 266. t. 18. f. 8, may be a bad figure of this species. Cuvier represents the dorsal anus in the other two species, but it is not marked in this, and the colouring somewhat resembles the Museum specimens.

There is a considerable difference in the internal anatomy of this genus, when compared with Cuvier's description of *Phyllidia trilineata*.

This genus is named after my excellent friend Mr. J. H. Fryer of Newcastle, who first sent to England the beautiful Chitons, *Fissurellæ*, *Purpuræ*, *Murices*, and other shells of the coast of Peru; and hence attracted the attention of naturalists and collectors to the rich harvest to be made in that country.

XXII.—*Additional Notice of the genus Tancredia (Lycett), Hettangia (Turquem).* By JOHN LYCETT, Esq..

At a meeting of the Cotteswold Naturalists' Club, held July 30, 1850, I had the honour to submit a memoir on the Testacea of the middle division of the Inferior Oolite, accompanied by a separate description of a group of small bivalve shells which occur both in that rock and in the Great Oolite. This group I proposed to erect into a genus, to be called *Tancredia*, a name intended to commemorate a gentleman no longer, unfortunately, a participator in our reunions. The fragility of the small shells which exemplified the genus, together with the coarseness of the investing stone, prevented my exposing the hinge of the left valve so clearly as could be wished; it was not therefore figured, and the description of the hinge in that valve was defective; but the hinge of the right valve, together with the external forms of three species, were faithfully rendered by Mr. Sowerby in the plate which accompanied the memoir. The 'Annals and Magazine of Natural History' for December 1850 contained the paper in question, and it was incorporated with the Transactions of the Cotteswold Naturalists' Club. The description of the hinge in the right valve was substantially correct, but owing to an imperfect knowledge of the form, arising from the valves being always found disunited, the term anterior was employed for posterior, and *vice versâ*.

It is necessary to revert to these facts with precision, as during

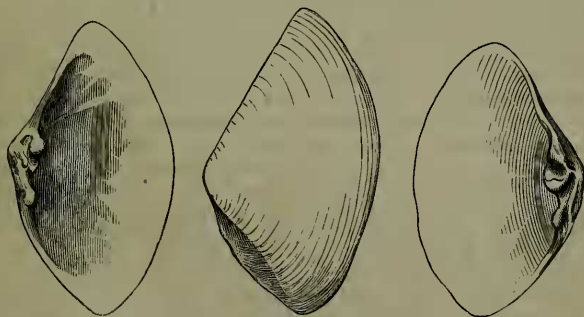
the past year (1852) a French author of eminence, both as a geologist and palæontologist, M. A. Buvignier of Verdun, has, in a new and splendid work on the geology of the department of the Meuse, figured and described certain species of *Tancredia* under the new generic name *Hettangia*, a name which he states to have been chosen by M. Turquem, the discoverer of the genus. The very superior manner in which the figures of that work are executed leaves no doubt of the identity of the two genera; the five species which M. Buvignier has illustrated are from the Lias, and bear the specific names *Broliensis*, *Deshayesea*, *Turquemea*, *longiscata*, and *Raulinea*? They are all distinct from the oolitic species of the Cotteswolds. From this statement it is evident, that in the absence of any other notice of the genus, my memoir on *Tancredia* has a claim to priority, and the generic name which I have chosen should be retained. More recently three additional species have been ascertained in our Great Oolite, and the hinge-characters of a fine Inferior Oolite species have been developed: as the latter shell, from its superior size and the prominence of its dentition, constitutes a remarkable example of the genus, I propose to describe it in detail, premising that the same species, in a greatly diminished form, was figured in the plate which accompanied the memoir of 1850, under the name of *T. donaciformis*. The small figure there given represents the usual size of specimens obtained in the shelly freestone of Leckhampton Hill; the larger examples now to be described occur not unfrequently in the bed called Gryphite grit, at Rodborough Hill, near Stroud, a locality which has produced so many novel and finely-preserved testacea. Upon comparing the hinge of the new shell with that of *T. extensa*, which was figured in my memoir, the difference between them is found to be considerable, and it requires a close scrutiny to perceive that the parts and their arrangement are alike in both, modified by the more advanced growth of the larger shell, and still more so by the peculiarities of the species.

The dental characters of *T. extensa* have much less prominence; they project but little vertically, and are more extended longitudinally. A similar difference is observable between the species which M. Buvignier has figured: his *T. Broliensis* in its hinge approaches to that of our large shell; but the hinge of his smaller and more elongated species, *Deshayesea*, presents a near resemblance to that of our *T. extensa*; the greater obliquity of the cardinal tooth in the elongated species is strongly marked, more especially in the left valve. The Rodborough examples of *T. donaciformis* may be regarded as representing the hinge-features in an exaggerated form, the result in some degree of greater age, inasmuch as smaller shells from the same locality lose much of

this prominence of character. There would seem to exist much variability in the margins of the valves: all the specimens figured by M. Buvignier have a considerable aperture at the truncated posterior border; our Cotteswold examples present this character much modified; it is however very evident in *T. donaciformis*; but, strictly speaking, the borders of the valves are not close-fitting along their extent.

The fact that four, and perhaps five, species of *Tancredia* have been obtained in the Lias of France, will, it is trusted, induce collectors to examine the same formation in Gloucestershire with increased attention. M. Buvignier does not record the genus in the Oolites. In England it has hitherto been recognised only in the lower oolitic system, which would appear, from the work of M. Buvignier, to be very partially and inadequately represented in the Department of the Meuse.

#### TANCREIDIA DONACIFORMIS.



*Sp. char.* Shell subtrigonal, transverse, rather depressed, pointed at the extremities; umbones mesial or antero-mesial, small, depressed; anterior side attenuated, its superior margin rather concave; posterior side truncated and gaping, its margin straight, posterior to the ligament, and sloping obliquely downwards; an angle extends obliquely from the umbo to the infero-posterior extremity; ligament short, external, horizontal; margins of the valves not close-fitting and rather irregular.

Upon the principle that our choice of the typical example of a genus should comprise the several peculiarities of the form in a conspicuous manner, I prefer to select the present species to illustrate *Tancredia*, and will adopt its hinge-characters in the following amended description:—

Hinge with an obtuse cardinal tooth in each valve, which is

received into a corresponding cavity in the opposite valve; there is also occasionally in the right valve a small anterior, and in the left a small posterior, accessory tooth upon the elevated margin of the cavity; lateral teeth, one large posterior and approximate in each valve, that of the left valve projecting, and received into a depression formed by the tooth or callosity of the other valve. Muscular impressions oval; pallial impression simple, faintly marked. There is no lunule: the margin of the right valve anterior to the umbo forms a thickened projecting fold which covers the tooth of the other valve, and is received into a corresponding receding portion of the margin of that valve, so that the junctions of the valves anterior to the umbones have a sinuous flexure. The lateral teeth are remarkably large in our typical species; they are never altogether absent, but are much depressed in some other species; and when this variation occurs in connexion with a depressed, oblique, and elongated cardinal tooth in the left valve, the hinge is much altered in its aspect: the variation is exemplified by several species which occur in our Great Oolite and in the Lias of the Meuse.

The small accessory cardinal teeth are very uncertain in their distinctness, and constitute only a minor and variable feature.

The figure of *Tancredia* varies according as the anterior or posterior sides are the most produced; several species have the posterior side very short and convex, the figure then nearly resembles that of the recent *Donaces*: all the species hitherto discovered are destitute of ornament, they are remarkably smooth, and exhibit but indistinctly the lines of growth.

The number of species now known afford sufficient data for comparison with other genera, and to determine its position in the malacological system. To existing genera it would appear to be only remotely connected; but there are certain fossil forms, as yet insufficiently known, which seem to approach to it in several particulars; but whether these latter forms, which are associated with *Tancredia* in the same beds, are entitled to a position distinct from existing genera, remains to be determined. M. Buvignier has only indicated the position of *Hettangia* by placing it with the *Cardiaceæ*.

XXIII—*Rambles in Ceylon*. By EDGAR LEOPOLD LAYARD, Esq.

To Richard Taylor, Esq.

[Continued from vol. ix. p. 339.]

MY DEAR SIR,—I left off on the point of starting for our return to the great central road, by a native path, through a line of country as yet unopened by any government road, but which our energetic